REMARKS

By way of summary, Claims 1-55 were originally filed with the application. By this amendment, Claims 1, 2, 6-8, 14, 24, 26-30, 33, 34, 39-41, and 47 are amended, Claims 52, and 53 are cancelled, and no new claims are added. Accordingly, Claims 1-51, 44, and 55 remain pending in the present application. The Applicant respectfully requests reconsideration of the above-captioned application in light of the amendments and remarks contained herein.

Claim rejections under 35 U.S.C. §102

In the Office Action, the Examiner rejected Claims 1-7, 10-23, 26, 34-40, and 43-53 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Number 2002/0191677 to Chen et al. ("Chen"). The Examiner further rejected Claims 1-5, 8-27, 34-38, 41-51, 54, and 55 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Number 2001/0010689 to Awater et al. ("Awater"). The Examiner additionally rejected Claims 1, 14, 26, 28, 31, 32, 34, and 47 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Number 6,690,657 to Lau et al. ("Lau"). The Examiner also rejected Claims 1, 14, 34, and 47 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Number 5,682,381 to Sekihata et al. ("Sekihata"). The Examiner further rejected Claims 1, 14, 34, and 47 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Number 5,852,405 to Yoneda et al. ("Yoneda"). In view of the following remarks and above-amendments, Applicant respectfully requests reconsideration of the claims and removal of each rejection.

The Applicant respectfully submits that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. See M.P.E.P. §2131.

Discussion of Allowable Subject Matter

On page 38 of the Office Action, the Examiner indicates that Claims 29, 30, and 33 each contain allowable subject matter. Applicant thanks the Examiner for this notice.

By this amendment, each of these claims have been rewritten in independent form and are each believed to be in condition for allowance. Applicant respectfully requests prompt notice of allowance of Claims 29, 30, and 33.

Independent Claims 1, 28, 34

In view of the Examiner's indication that Claims 29, 30, and 33 each include allowable subject matter, Applicant has amended certain of the pending independent claims to include the subject matter of Claims 29, 30, and/or 33. For example, Claims 1, 28, and 34 have each been amended to recite the allowable subject matter of Claim 29. More particularly, amended Claim 1 recites, in pertinent part:

> A centralized coordination device for a wireless communication network, wherein a first plurality of communication devices using a first protocol and a second plurality of communication devices using a second protocol exchange data transmissions within the wireless communication network using at least partially overlapping communication frequencies, the first plurality of communication devices comprising a master device and a slave device, wherein communications from the master device to the slave device comprise downstream data transmissions and communications from the slave device to the master device comprise upstream data transmissions, the centralized coordination device comprising... a signal processing component that ... moderates the data transmissions by influencing the downstream data transmissions associated with at least some of the communication devices.

The cited art fails to teach that "a signal processing component ... moderates the data transmissions by influencing the downstream data transmissions associated with at least some of the communication devices," as recited in Claim 1.

Amended Claim 28 recites, in pertinent part:

> A communication system for wireless network comprising ... a signal processing component used by the centralized coordination point ... wherein the signal processing component moderates the wireless data transmissions by influencing the downstream data transmissions associated with at least some of the wireless communication devices.

Likewise, the cited art fails to teach that a "signal processing component... moderates the wireless data transmissions by influencing the downstream data transmissions associated with at least some of the wireless communication devices," as recited in Claim 28.

Amended Claim 34 recites in pertinent part:

A method of scheduling a plurality of wireless data transmissions between a first
and second protocol that operate with overlapping communication frequencies in
a plurality of wireless communication devices, the method comprising:

....

implementing a collision avoidance procedure based on the type of
communication link between the master device and the slave device by
influencing the downstream data transmissions associated with at least some of
the wireless communication devices to reduce collisions and improve throughput
in the wireless communication network.

Furthermore, the cited art fails to teach "influencing the downstream data transmissions
associated with at least some of the wireless communication devices to reduce collisions and
improve throughput in the wireless communication network," as recited in Claim 34.
Furthermore, Applicant submits that the cited art fails to teach the combination of features
recited in amended Claims 1, 28, and 34. Accordingly, Claims 1, 28, and 34 are each believed
to be in condition for allowance over the cited art.

Claims 2-13 depend from Claim 1 and include each of the limitations of Claim 1. Claims
31-32 depend from Claim 28 and each include the limitations of Claim 28. The unique
combination of features recited in each of Claims 2-13 and 31-32 are believed to be patentable
over the prior art. Therefore, reconsideration and removal of the rejection of pending claims 1-
13, and 31-32 is respectfully requested.

Independent Claim 14

Claim 14 is rejected under 35 U.S.C. § 102(b) as being anticipated by Chen and Awater.

Chen describes "[an] apparatus and method for determining a hopping sequence for
hoppingly selecting a channel from M channels divided into Np partitions to reduce probability
of data collision in a FHSS communication system." *Chen,* paragraph [0021]. Chen discloses
that:

"the partition sequences are such selected that they meet Arc requirements or
traffic characteristic in FHSS communication systems. The traffic characteristics,
for example, include traffic patterns of a synchronous type and an asynchronous
type. Examples of a synchronous type of traffic are voices and video, where the
service or information is time-bounded and real-time. Examples of an
asynchronous type of traffic are short message, email and FTP, where what
matters most is the overall throughput of right information. *Delay is not endurable*

in the synchronous type of information. Usually reserved time slots for the synchronous type of traffic are required to ensure smooth receiving." *Chen,* paragraph [0050] (Emphasis added).

Thus, Chen appears to disclose a method and apparatus which prioritize traffic based upon the type of transmission *only*.

Awater describes a combined IEEE 802.11/Bluetooth transceiver where:

"If there are active Bluetooth SCO (Synchronous, connection-oriented voice) connections, which transmit and receive periodically in a 0.625 ms Bluetooth slot, then the IEEE 802.11 transceiver must schedule its packet transmissions in-between the Bluetooth packets..." *Awater,* paragraph [0063].

Thus, Awater discloses a device which delays IEEE 802.11 packets to allow Bluetooth SCO connections, prioritizing the Bluetooth SCO traffic over IEEE 802.11. Awater further discloses:

"if a Bluetooth ACL packet transmission or reception is in progress, the IEEE 802.11 transmission is held back until the Bluetooth transmission/reception is completed. Then the Bluetooth ACL connection is put in HOLD or PARK mode, and the IEEE802.11 transmission can be scheduled and organized around SCO transmissions, as described above." *Awater,* paragraph [0089].

Thus, Awater discloses a device which prioritizes Bluetooth ACL connections over IEEE 802.11 packets. Therefore, Awater teaches prioritizing network traffic based on the traffic type *only*.

In contrast to Awater and Chen, amended Claim 14 recites, in pertinent part:

A centralized coordination device for a wireless communication network, wherein a plurality of communication devices using a first protocol and a second protocol transmit a plurality of frequency-overlapping data transmissions in the wireless communication network, the device comprising:

...

a signal processing component... configured to prioritize the plurality of frequency-overlapping data transmissions based on the communication link type used by devices communicating using the first protocol, the timing characteristics, *the throughput service level, and the desired service quality* for the first and second protocols to reduce collisions in the data transmissions of the first and second protocols.

Applicant respectfully submits that Chen and Awater each fail to teach or suggest at least the feature of prioritizing overlapping data transmissions based on "the throughput service level and

the desired service quality," as recited in Claim 14. Furthermore, Applicant submits that the cited art fails to teach the combination of features recited in amended Claim 14. Accordingly, Applicant respectfully submits that Claim 14 is in condition for allowance.

Claims 15-25 depend from Claim 14 and each include the limitations of Claim 14. The unique combination of features recited in each of Claims 15-25 are believed to be patentable over the prior art. Therefore, reconsideration and removal of the rejection of pending Claims 15-25 is respectfully requested.

Independent Claim 26

Claim 26 is rejected under 35 U.S.C. § 102(b) as being anticipated by Chen and Lau. As noted above, Chen appears to disclose a method and apparatus which determine and implement a sequence of frequency hops in order to avoid collisions between transmissions on the same channel based on a number of criteria.

Lau discloses, "[a] multichannel distributed wireless repeater network, methods for its operation, and system components" *Lau,* Abstract. Lau further describes:

> The network utilizes low-power RF transmitters that generally have insufficient power to reliably span the entire network of receivers. To provide uniform coverage throughout the network, channel-shifting repeaters are used. These repeaters pick up a transmitted (or retransmitted) signal on one channel, *shift it to a substantially non-interfering channel,* and retransmit the signal. *Lau,* Abstract (emphasis added).

Lau appears to describe repeaters for use in a wireless network to extend the range of transmitters to all the receivers in the network and which avoid interference between transmissions within a channel by shifting the channel used for retransmission. Lau additionally discloses:

> Two channels can be arranged to be substantially non-interfering by arranging them in separate, substantially non-overlapping ranges of frequencies (e.g., two narrowband channels, or two FHSS channels using offset or different pseudorandom hopping sequences or phases), but those of ordinary skill will appreciate that substantial non-interference can be achieved in many other ways, such as by time-division multiplexing, code-division multiplexing (e.g., DSSS), or combinations of several or all of these techniques. *Lau,* Col. 4, l. 53 – col. 5, l. 1.

Thus, Lau appears to teach that substantial non-interference on a channel is achieved by the choice of channel and/or use of one or more transmission protocols.

In contrast to Chen and Lau, amended Claim 26 recites in pertinent part:

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> A centralized coordination system for a wireless communication network, wherein data transmissions are exchanged using overlapping communication frequencies, the system comprising:
>
> ...
>
> a Bluetooth master device... prioritizes the plurality of wireless network data transmissions by *dropping* at least some of the Bluetooth data transmissions to reduce collisions between Bluetooth and WLAN data transmissions and to improve throughput in the wireless communication network.

Thus, amended Claim 26 teaches a system for reducing collisions in a wireless communication network by, "*dropping* at least some of the Bluetooth data transmissions." Applicant respectfully submits that the cited art fails to teach or suggest at least this feature. Furthermore, Applicant submits that the cited art fails to teach the combination of features recited in amended Claim 26. Accordingly, Claim 26 is believed to be in condition for allowance.

Independent Claim 47

Claim 47 is rejected under 35 U.S.C. § 102(b) as being anticipated by Chen, Awater, Lau, Sekihata, and Yoneda.

Sekihata discloses a master station where:

> "the master station is capable of controlling the sending/discarding of received frames in the following manner: ...the master station determines whether a frame identical with the frame received from the slave station is present on the backbone LAN. *If the identical frame is present, the frame is discarded from the slave station.* If the identical frame is not present, the master station sends the frame from the slave station to the backbone LAN after communication of the frame flowing on the LAN is completed. If this arrangement is adopted, other master stations can reliably verify that a received frame has been sent to the backbone LAN. This makes it possible to prevent a situation in which none of the master stations sends a frame, *thus assuring that frames will not be lost.*" *Sekihata*, column 5, lines 39-54 (emphasis added).

Thus, Sekihata teaches a master station which discards identical frames present on the backbone LAN from a slave station and verifies that a received frame has been sent in order to assure that *frames are not lost.*

Yoneda describes a wireless LAN system, "having two or more master stations each connected to a wired LAN... The master station has a LAN controller which periodically notifies

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the other master station of the state of use of its own channel via a notification packet." *Yoneda*, Abstract. Thus, Yoneda teaches a wireless LAN system containing master stations which inform other master stations of their state of use by a notification packet. Yoneda further discloses:

> "When the wireless LAN system becomes extensive, a plurality of wired LANs are provided and the wired LANs are interconnected by a network repeater... If this arrangement is adopted, the network repeater 41 judges the short [notification] packet as being indicative of an error, discards the packet and does not send it to the other wired LANs." *Yoneda*, column 10, lines 5-27 (emphasis added).

Thus, Yoneda teaches a LAN system where notification packets are exchanged between master stations of a plurality of wired LANs, where a network repeater discards notification packets.

> In contrast to the cited art, amended Claim 47 recites in pertinent part:

> A method of scheduling a plurality of wireless data transmissions derived from a frequency hopping spread spectrum (FHSS) protocol and a direct sequence spread spectrum (DSSS) protocol that are transmitted with overlapping communication frequencies, the method comprising:
>
> ...
> implementing a collision avoidance procedure based on the type of communication link between the FHSS master device and the DSSS slave device , wherein the collision avoidance procedure moderates the wireless data transmissions by influencing downstream data transmissions associated with at least some of the communication devices by dropping at least one of the plurality of wireless data transmissions derived from the FHSS protocol to reduce collisions and improve throughput in the wireless communication network.

Thus, amended Claim 47 teaches a method for scheduling a plurality of wireless data transmissions by "implementing a collision avoidance procedure based one the type of communication link... by dropping at least one of the plurality of wireless data transmissions... to improve throughput..." The Applicant respectfully submits that the cited art, alone or in combination, fails to teach or suggest at least this feature. Furthermore, the cited art fails to teach or suggest the combination of features recited in amended Claim 47. Accordingly, Claim 47 is believed to be in condition for allowance over the cited art.

Claims 48-51 and 54-55 depend from Claim 47 and include each of the limitations of Claim 47. Therefore, reconsideration and removal of the rejection of pending claims 48-51 and 54-55 is respectfully requested.

SUMMARY

For the forgoing reasons, the Applicant believes that the present application, as amended, is now in condition for allowance and the Applicant respectfully requests the prompt allowance of the same.

The undersigned has made a good faith effort to respond to all of the rejections in the case and to place the application under condition for immediate allowance. Nevertheless, if any undeveloped issues remain, or if any issues require clarification, the Examiner is respectfully requested to call the undersigned at the number shown below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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